

IN THE CLAIMS:

1. (Currently amended) A cell observation chamber for use in an apparatus for detecting cell chemotaxis and for isolating chemotactic cells, said chamber comprising:

a dish-shaped bottom support body with a window for observing the movement of cells provided in the center of a bottom surface thereof;

a glass substrate adapted to be placed on the bottom surface of said bottom support body;

a dish-shaped intermediate support body with an opening in the center of a bottom part thereof, said intermediate support body being adapted to be attached to said bottom support body to press and fix said glass substrate from above onto the bottom surface of said bottom support body;

a substrate having, in a surface facing said glass substrate, at least a pair of wells and a flow path providing communication between said wells, said substrate further having a plurality of through holes for guiding cell suspension and chemotactic factor containing solution therethrough and into said wells, said substrate being adapted to be fixed onto the surface in the central part of said glass substrate;

a packing member with a plurality of through holes for guiding said cell suspension and said chemotactic factor containing solution therethrough formed therein, said packing member being adapted to be fitted into said opening in the center of the bottom part of said intermediate support body to press said substrate from above; and

a dish-shaped cover block body with a plurality of through holes for guiding said cell suspension and said chemotactic factor containing solution therethrough formed in the center of a bottom thereof, said cover block body being adapted to be attached to said bottom support body with said intermediate support body attached thereto to press and fix said substrate from above onto said glass substrate through said packing member;

a first cam mechanism comprising a pair of pins symmetrically arranged on and extending from a periphery of said cover block body and a first U-shaped cam lever pivotally mounted on said bottom support body and including a first handle and a first

pair of legs respectively fixed to opposing ends of the handle, each of said first legs having a cam groove receiving one of the pins extending from said cover block body, whereby movement of said first cam lever from a first position to a second position forces together said cover block body and said bottom support body, with said intermediate support body clamped therebetween and movement of said first lever from the second position back to the first position releases said cover block body, said intermediate support body and said bottom support body from engagement with each other; and

a second cam mechanism comprising a pair of pins symmetrically arranged on and extending from a periphery of said intermediate support body and a second U-shaped cam lever pivotally mounted on said bottom support body and including a second handle and a second pair of legs respectively fixed to opposing ends of the second handle, each of said second legs having a cam groove receiving one of the pins extending from said intermediate support body, whereby movement of said second cam lever from a first position to a second position forces together the intermediate support body and said bottom support body and movement of said second lever from the second position back to the first position releases said intermediate support body and said bottom support body from engagement with each other.

2. (Canceled)

3. (Previously presented) The cell observation chamber according to claim 1, further comprising:

a guide block body attached to said cover block body, said guide block body having a plurality of through holes for guiding a micropipette to dispense either said cell suspension or said chemotactic factor containing solution therethrough into one of said wells.

4. (Previously presented) The cell observation chamber according to claim 1, further comprising:

a pair of support shaft portions symmetrically arranged on and extending from said bottom support body; and

wherein said legs of said first and second cam levers are mounted on said support shaft portions.

5. (Previously presented) The cell observation chamber according to claim 1, wherein:

said cover block body and said intermediate support body each have a peripheral flange; and said bottom support body has a rim presenting an annular surface; and further comprising:

first holes in a surface of the peripheral flange of the cover block body and second holes aligned with the first holes and formed in a surface of the peripheral flange of the intermediate support body facing the flange of the cover block body and a first pin received in each of said second holes and in a first hole aligned therewith for circumferentially positioning said cover block body on said intermediate support body; and

third holes in another surface of the peripheral flange of the intermediate support body facing the bottom support body and fourth holes aligned with the third holes and formed in the annular surface of said bottom support body and a second pin received in each of said third holes and in a fourth hole aligned therewith for circumferentially positioning said intermediate support body on said bottom support body.

6. (Previously presented) The cell observation chamber according to claim 5, wherein said first pins have different diameters and said second pins have different diameters.